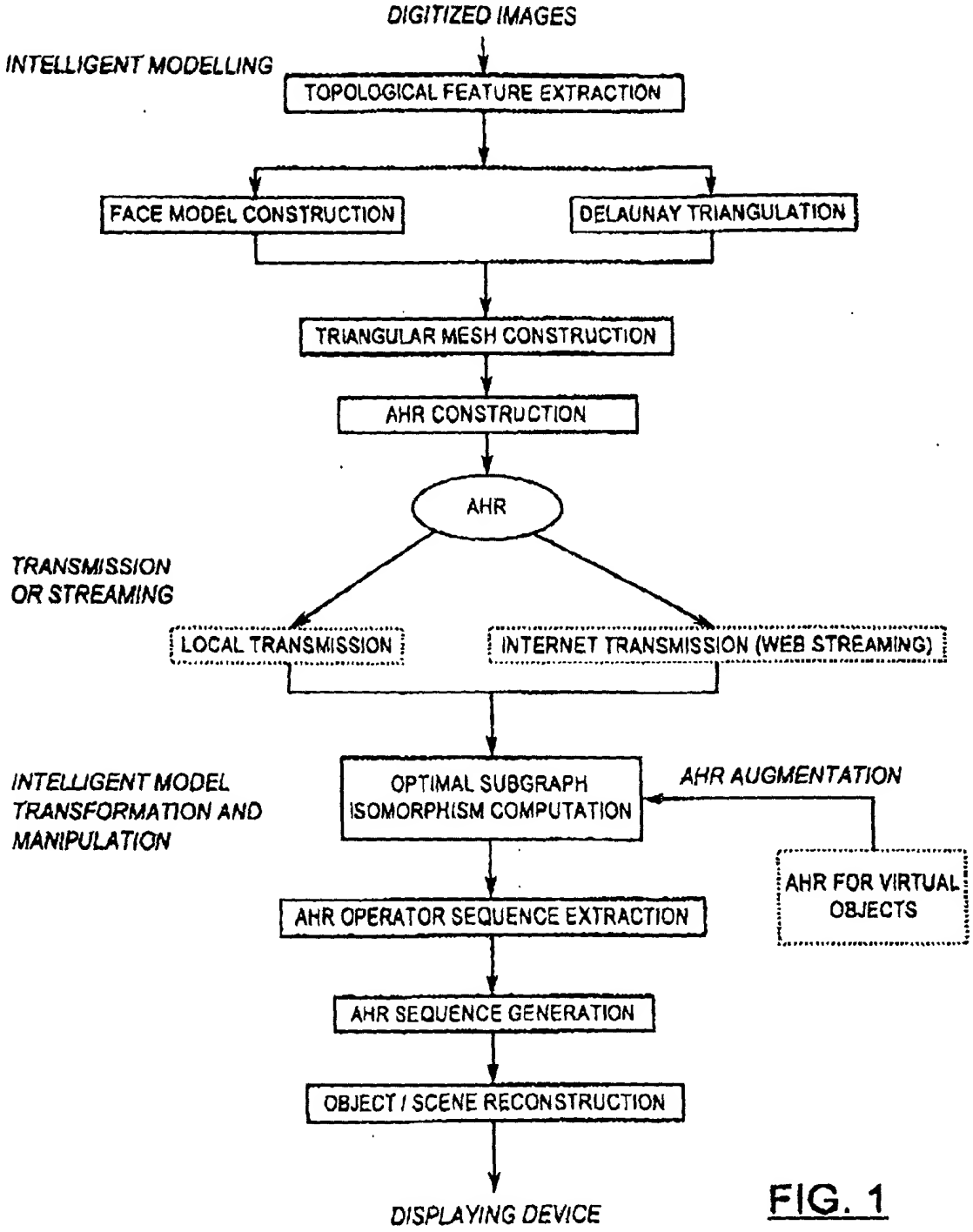
DIGITIZED IMAGES
INTELLIGENT MODELLING
TOPOLOGICAL FEATURE EXTRACTION
FACE MODEL CONSTRUCTION
DELAUNAY TRIANGULATION
TRIANGULAR MESH CONSTRUCTION
AHR CONSTRUCTION
AHR
TRANSMISSION OR STREAMING
LOCAL TRANSMISSION
INTERNET TRANSMISSION (WEB STREAMING)
INTELLIGENT MODEL TRANSFORMATION AND MANIPULATION
OPTIMAL SUBGRAPH ISOMORPHISM COMPUTATION
AHR AUGMENTATION
AHR FOR VIRTUAL OBJECTS
AHR OPERATOR SEQUENCE EXTRACTION
AHR SEQUENCE GENERATION
OBJECT / SCENE RECONSTRUCTION
DISPLAYING DEVICE

FIG. 1

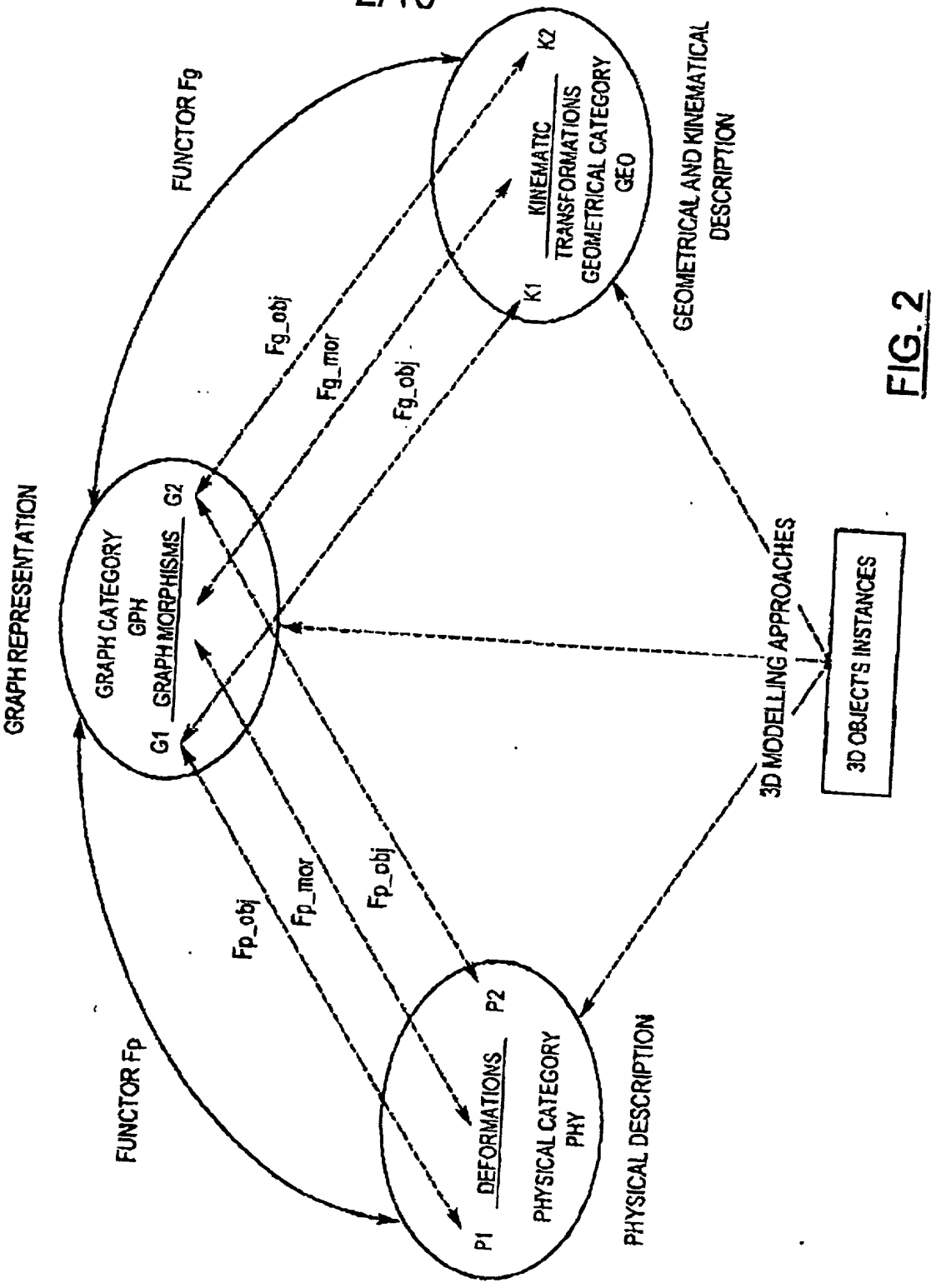
FUNCTOR Fg
K2
KINEMATIC
TRANSFORMATIONS
GEOMETRICAL CATEGORY
GEO
K1
GEOMETRICAL AND KINEMATICAL DESCRIPTION
Fg_obj
Fg_mor
Fg_obj
GRAPH REPRESENTATION
GRAPH CATEGORY
GPH
GRAPH MORPHISMS
G2
G1
3D MODELLING APPROACHES
3D OBJECTS INSTANCES
Fp_obj
Fp_mor
Fp_obj
FUNCTOR Fp
P2
DEFORMATIONS
PHYSICAL CATEGORY
PHY
P1
PHYSICAL DESCRIPTION

FIG. 2

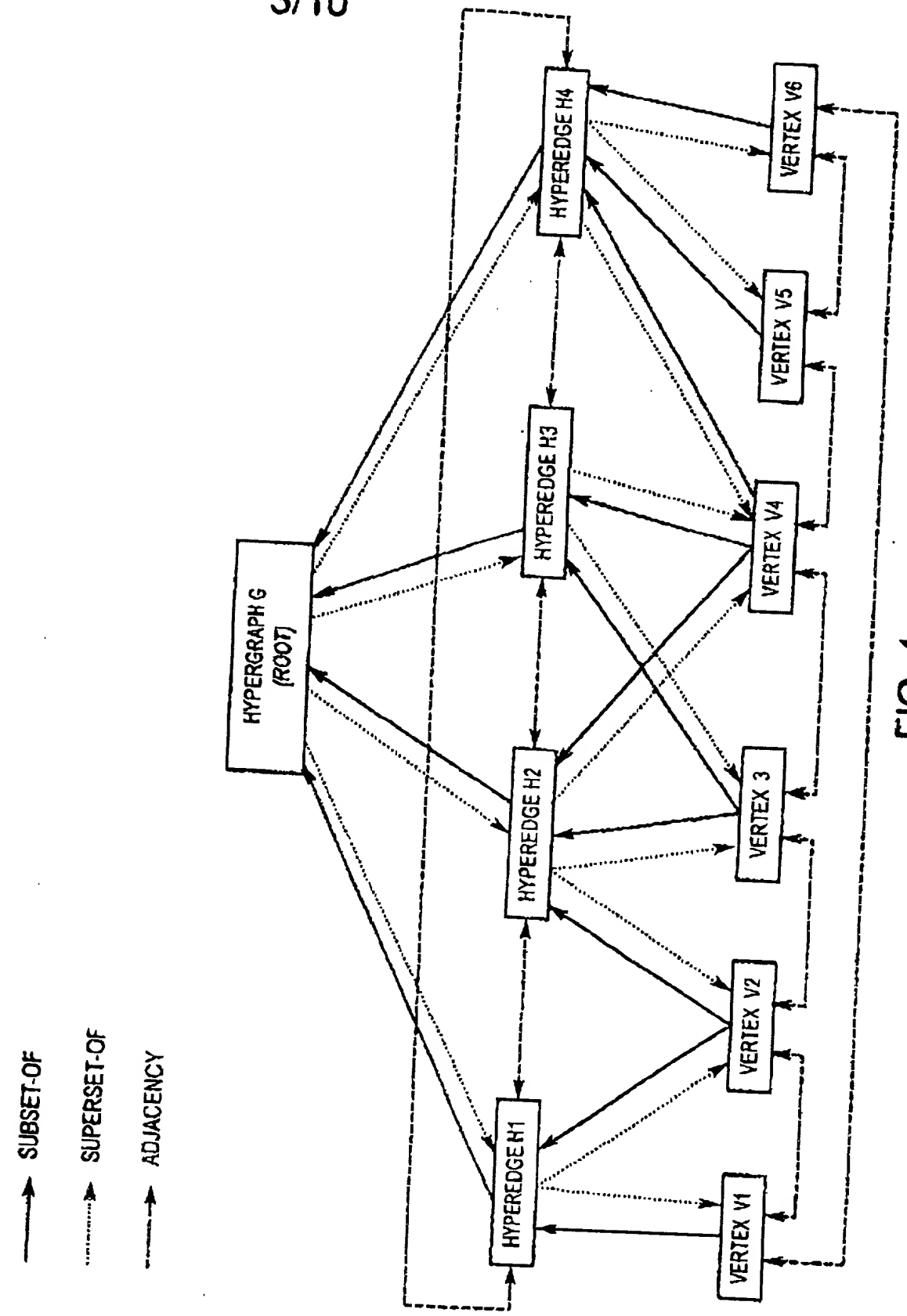
HYPERGRAPH G (ROOT)
HYPEREDGE H1
HYPEREDGE H2
HYPEREDGE H3
HYPEREDGE H4
VERTEX V1
VERTEX V2
VERTEX 3
VERTEX V4
VERTEX V5
VERTEX V6
SUBSET-OF
SUPERSET-OF
ADJACENCY

FIG. 4

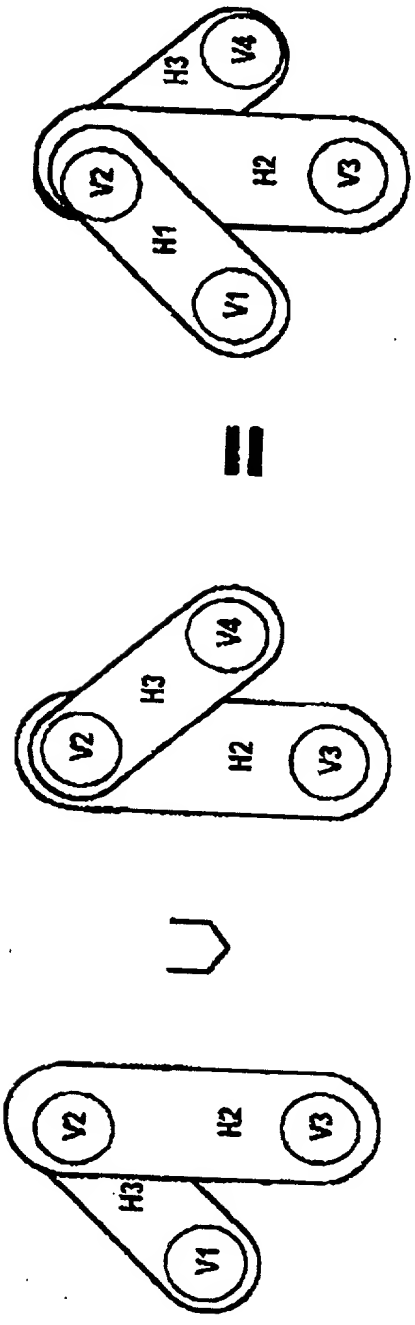


FIG. 5a

FIG. 5b

DOCKET: 628.52/610

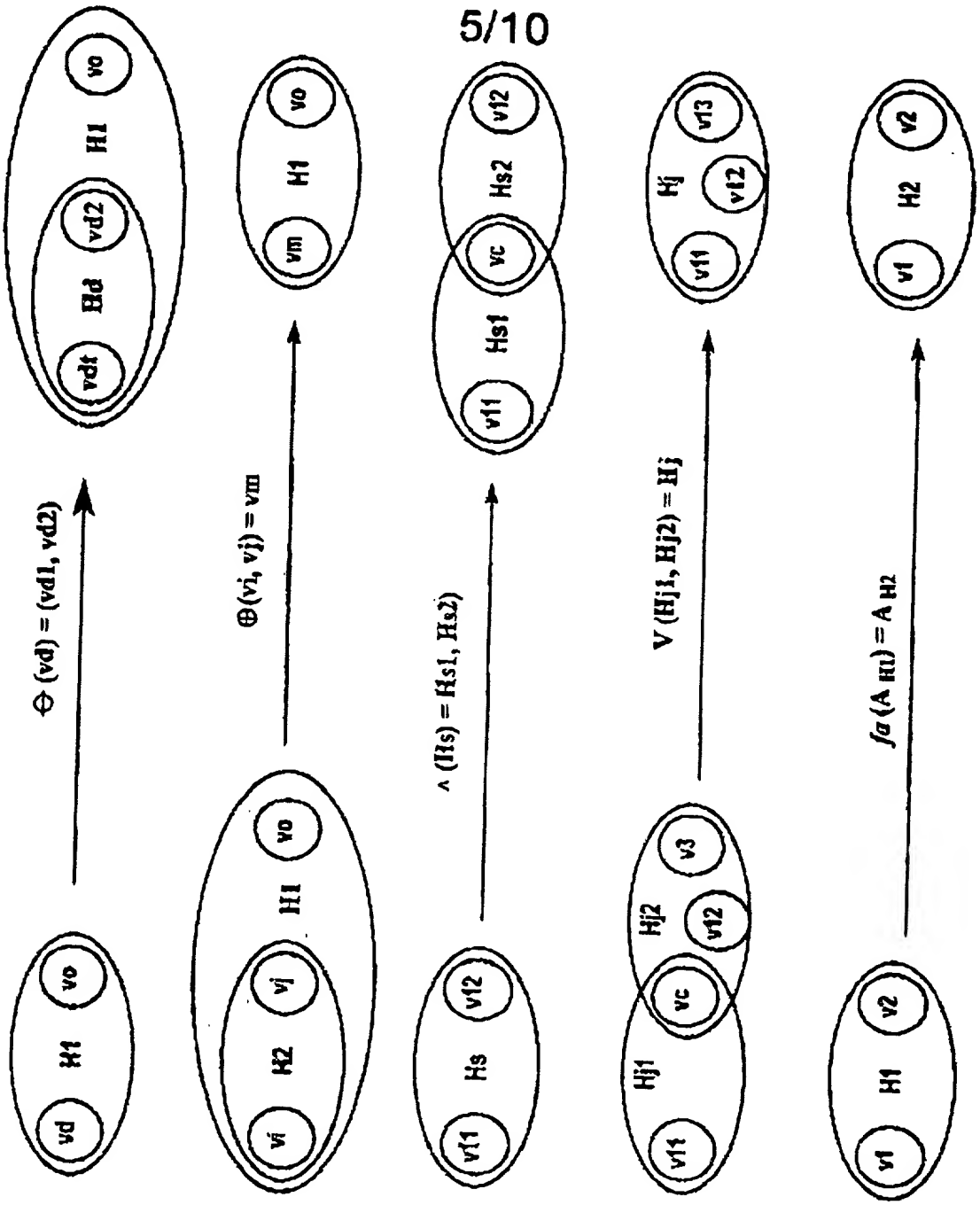


FIG. 6(a)

FIG. 6(b)

FIG. 6(c)

FIG. 6(d)

FIG. 6(e)

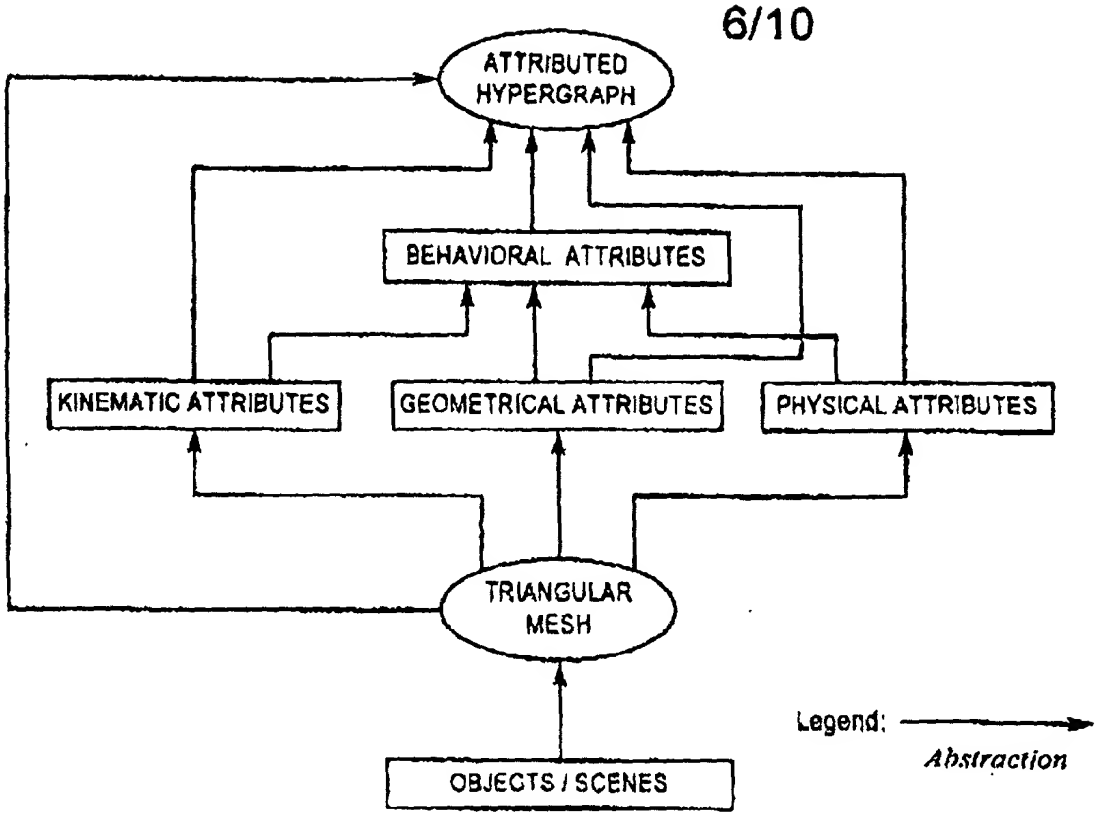
ATTRIBUTED HYPERGRAPH
BEHAVIORAL ATTRIBUTES
KINEMATIC ATTRIBUTES
GEOMETRICAL ATTRIBUTES
PHYSICAL ATTRIBUTES
TRIANGULAR MESH
OBJECTS / SCENES
Legend:
Abstraction

FIG. 7

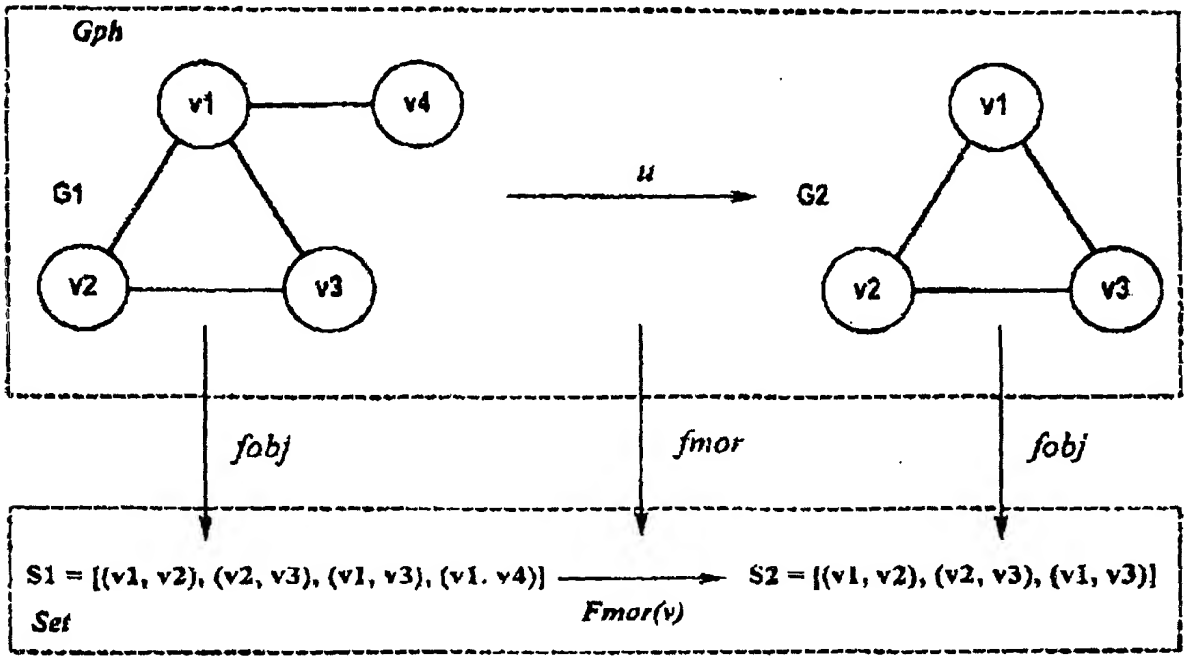
Gph
v1
v4
G1
v2
v3
u
G2
v1
v2
v3
fobj
fmor
fobj
S1 = [(v1, v2), (v2, v3), (v1, v3), (v1. v4)]
S2 = [(v1, v2), (v2, v3), (v1, v3)]
Set
Fmor(v)

FIG. 3

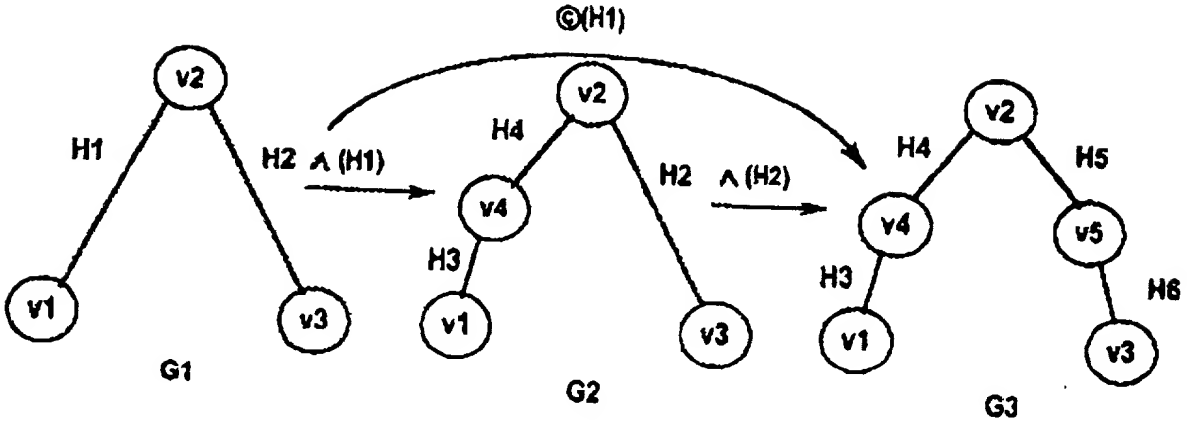


FIG. 8

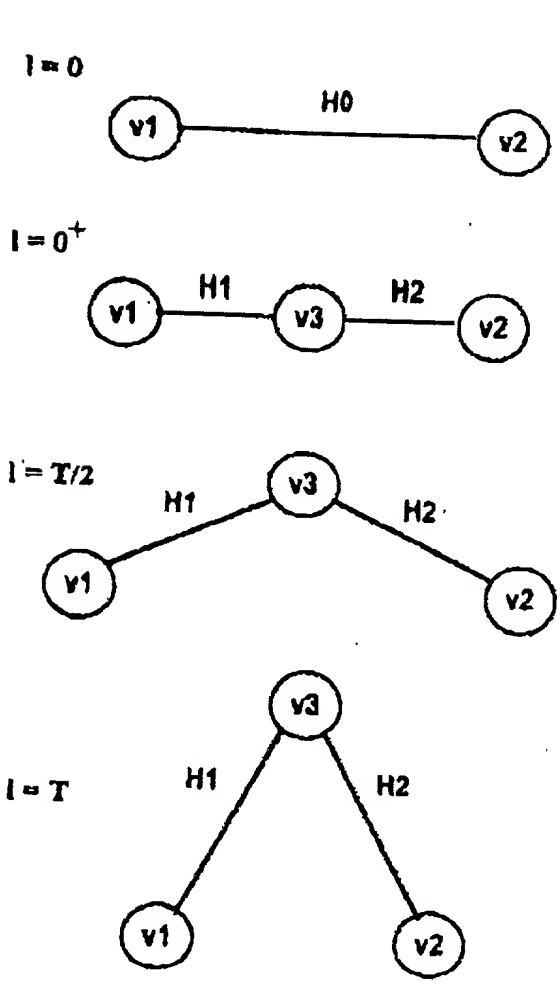


FIG. 9(a)

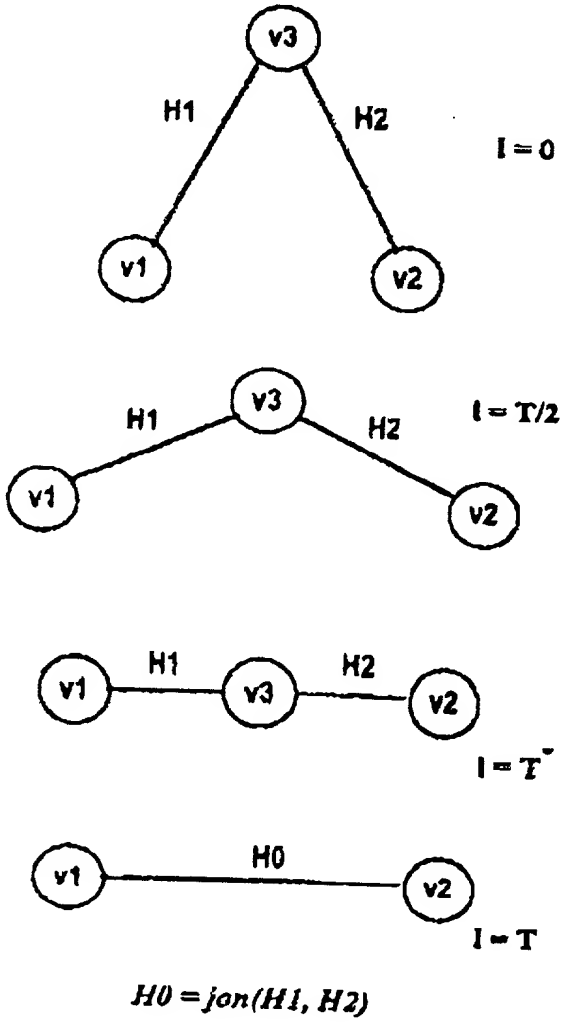


FIG. 9(b)

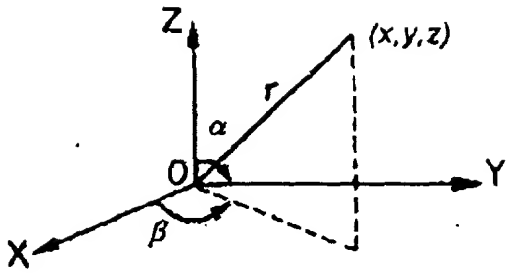
Z
(x,y,z)
r
α
O
Y
X
β

FIG. 10

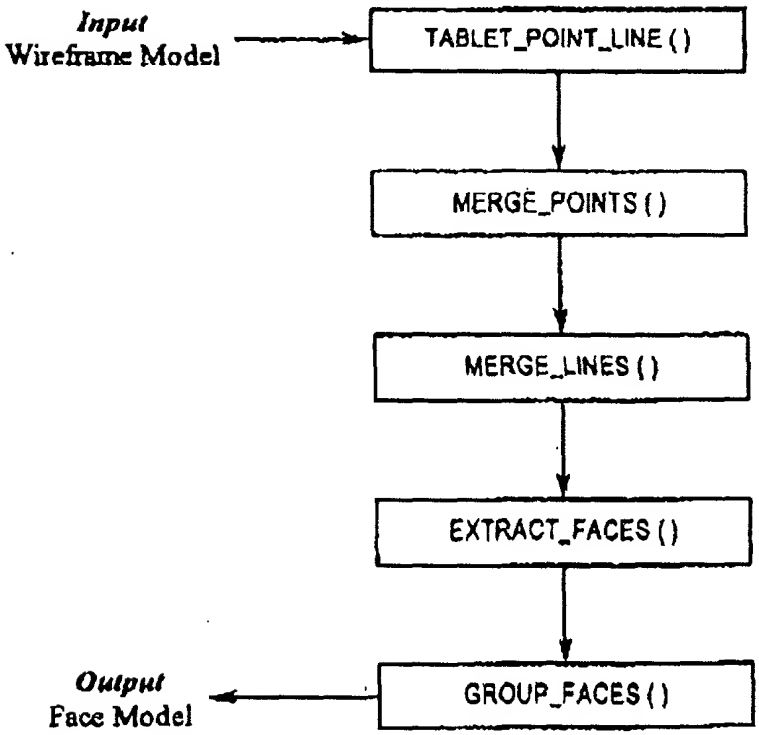
Input
Wireframe Model
TABLET_POINT_LINE ( )
MERGE_POINTS ( )
MERGE_LINES ( )
EXTRACT_FACES ( )
GROUP_FACES ( )
Output
Face Model

FIG. 11

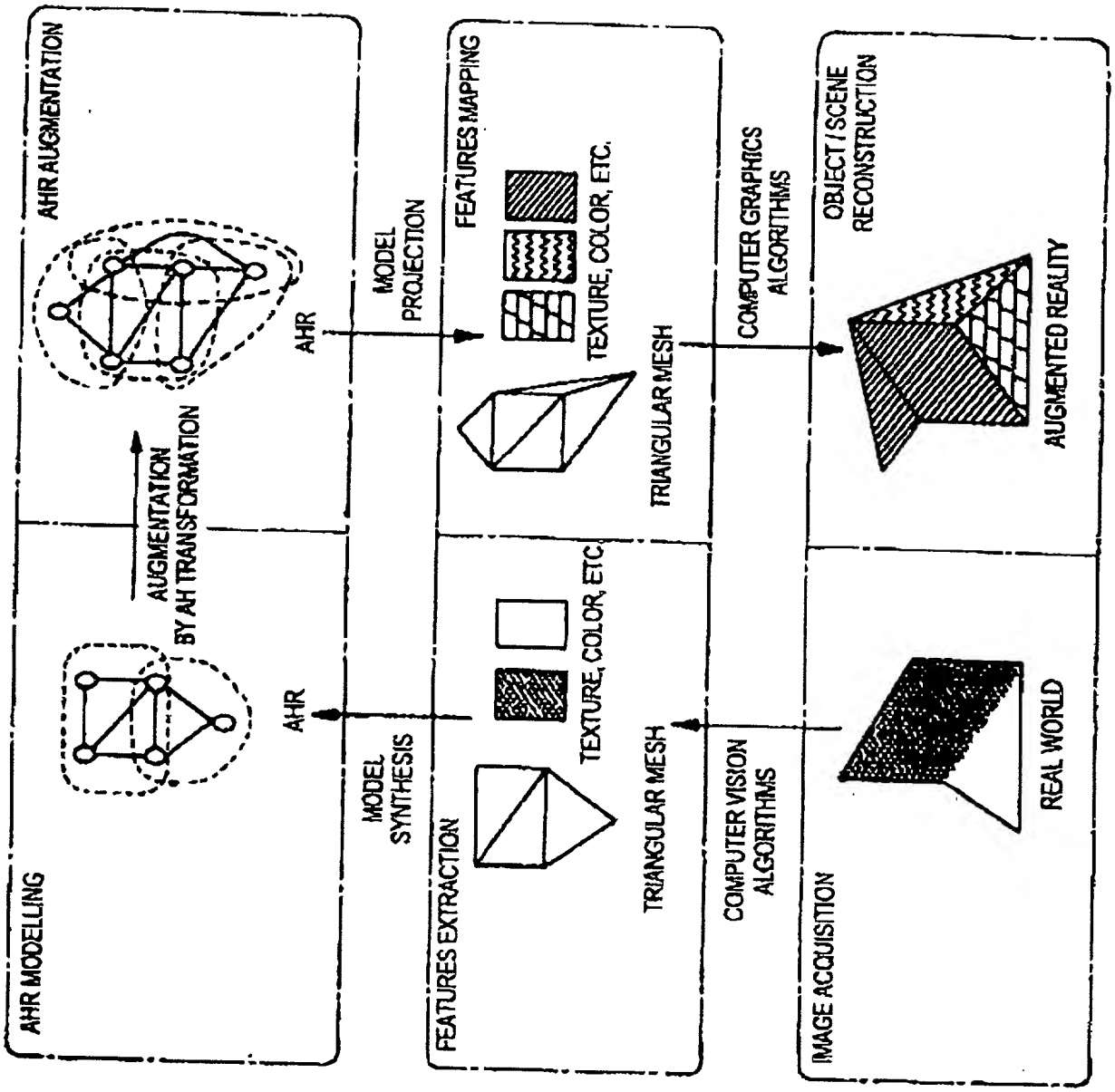
AHR MODELLING
AHR AUGMENTATION
AUGMENTATION BY AH TRANSFORMATION
AHR
MODEL SYNTHESIS
FEATURES EXTRACTION
TEXTURE, COLOR, ETC.
TRIANGULAR MESH
COMPUTER VISION ALGORITHMS
IMAGE ACQUISITION
REAL WORLD
AHR
MODEL PROJECTION
FEATURES MAPPING
TEXTURE, COLOR, ETC.
TRIANGULAR MESH
COMPUTER GRAPHICS ALGORITHMS
OBJECT / SCENE RECONSTRUCTION
AUGMENTED REALITY

FIG. 12

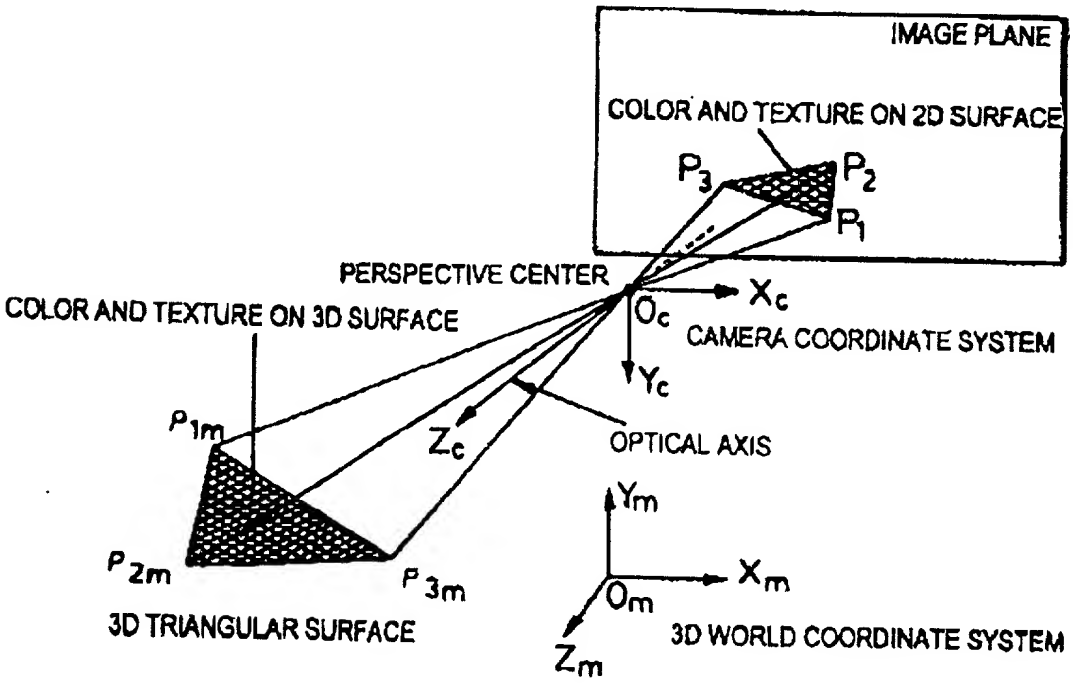


FIG. 13

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